

Monitoring Report 2021

Waterbody: Blacksmith Fork stations 1 and 2 Date: September 27, 2021

Target Species: Brown Trout, Bonneville Cutthroat Trout, Mountain Whitefish, Rainbow Trout

Methods

Gear Type	Effort	Water Temp (°F)	Additional Data Collected
Backpack Electrofishing	Roughly 6 hours		

Abundance, Condition, and Proportional Size Distribution of Target Species at Station 1

Species	Total Caught	Population Estimate	±	Fish/mile	±	kg/ha	lb/acre	Stock	Quality	Preferred
BCT	5	5	2	52	19	5	4	90	10	0
age 0 BNT	175	228	47	2226	457	9	8	N/A	N/A	N/A
BNT	221	223	4	2177	35	186	166	21	70	9
MWF	18	18	1	176	5	20	17	-	-	-
SC	116	620	1967	6049	19188	16	14	N/A	N/A	N/A

Mean lengths, weights and condition factor of Target Species at Station 1

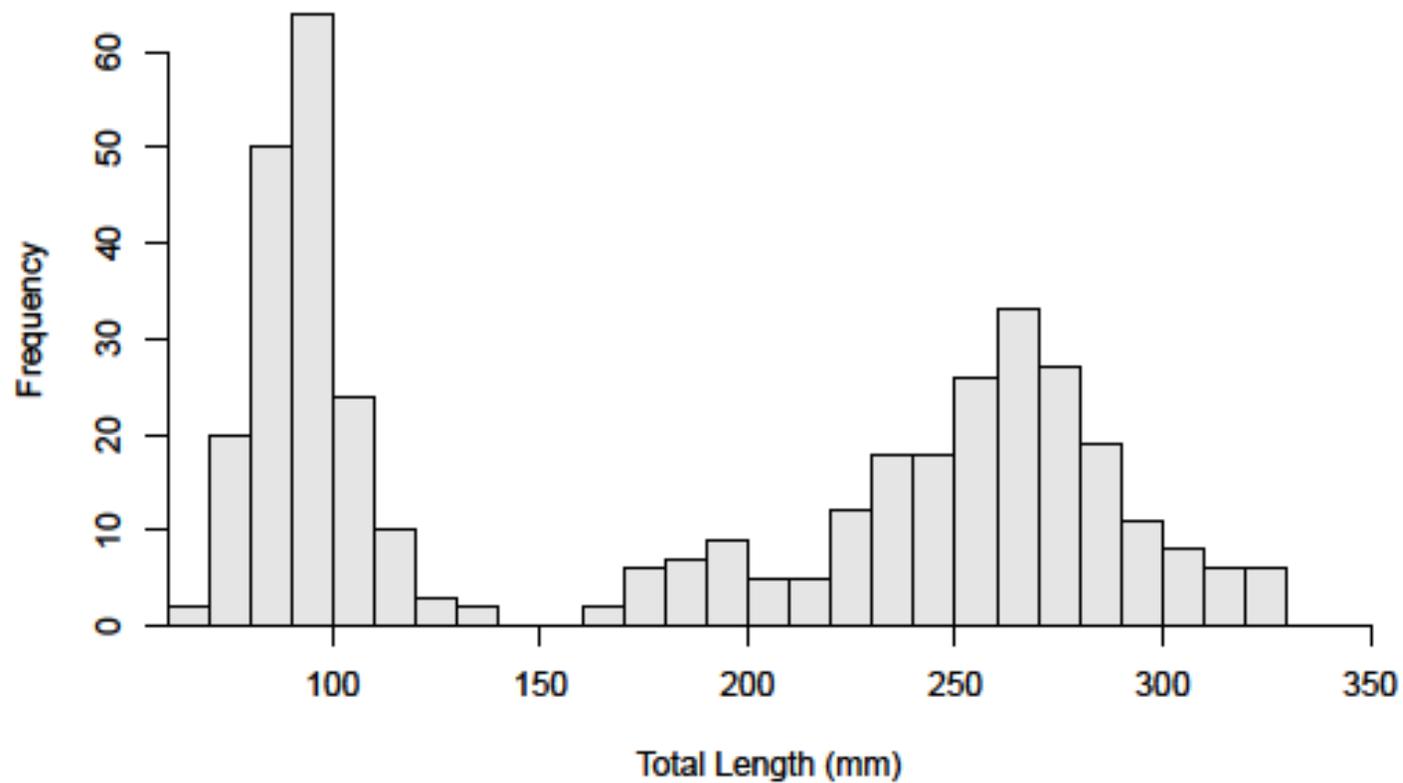
Species	Length (mm)				Weight (g)				Mean Condition Factor (Fulton's k)	Relative Weight (Wr)
	Mean	Std	Min	Max	Mean	Std	Min	Max		
BCT	254	87	125	341	187	138	17	355	0.9	82
age 0 BNT	93	12	68	138	8	4	3	26	-	-
BNT	255	36	162	330	171	62	38	366	1.0	90
MWF	266	84	132	469	223	204	18	880	0.9	-
SC	67	16	43	120	5	4	1	27	-	-

Comments: Sampling at Station 1 indicated a dense population of Brown Trout (BNT). BNT mean condition factor has been stable through both surveys. No Relative Weight (Wr) was performed on the data in 2012 but with this sampling effort it was 90 which indicates the fish are in overall good health and have enough food. Overall BNT numbers dropped from 3,091 fish/mile to 2,177 fish/mile. Bonneville Cutthroat Trout (BCT) mean condition factor in 2012 was 1.07 and in 2021 it was 0.92. The relative weight for BCT in 2021 was 81.92. BCT numbers dropped from 251 fish/mile to 52 fish/mile. Recent research has indicated that BNT compete with BCT for food resources and optimal habitats. BNT are also great predators on BCT age 0 fish. Mountain Whitefish (MWF) mean condition factor in 2012 was 1.07 but in 2021 it fell to 0.90. MWF numbers dropped from 270 fish/mile to 176 fish/mile. We have found that BNT are significant predators in other river systems within the region and may compete for food resources.

Suggested Management Changes: None. Regulations are in place to allow anglers to harvest an extra 4 BNT in addition to the statewide limit of 4 trout. This survey shows there are still dense populations of smaller fish that

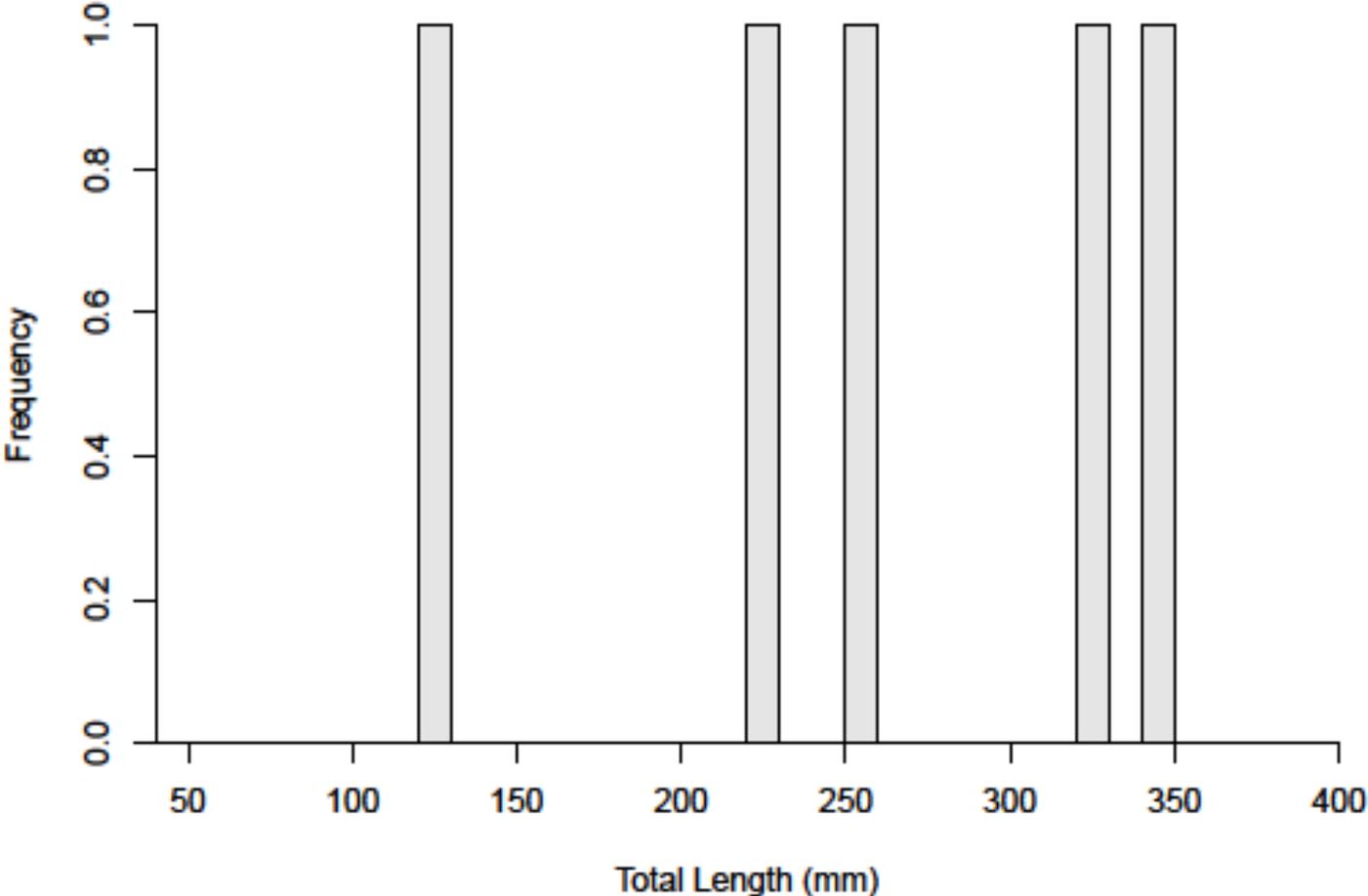
could use some additional harvest to attain a more desirable length structure of brown trout; demonstrating there is still value to allowing for additional harvest of fish.

Brown Trout Length Frequency in Blacksmith Fork 2021 Station 1



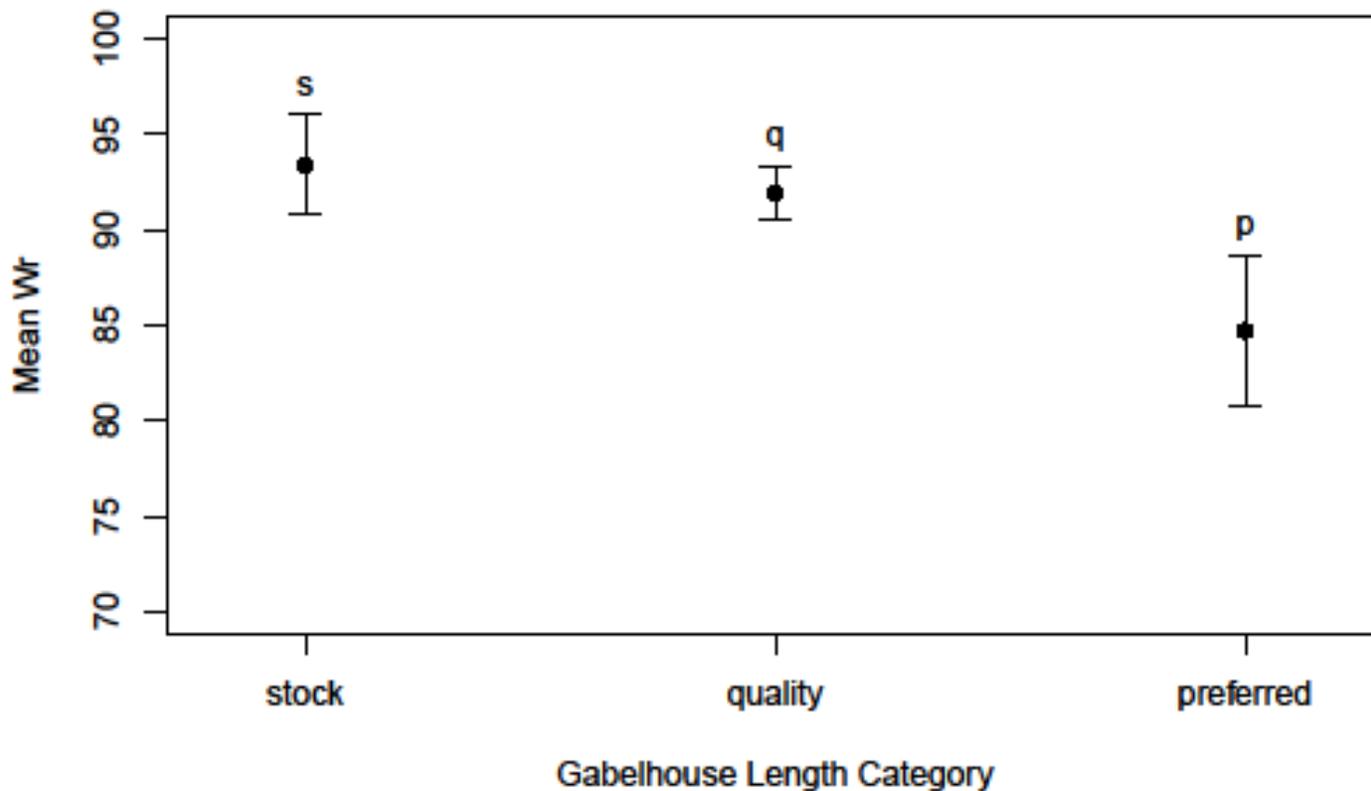
Frequency of BNT taken in electrofishing effort on September 30, 2021 at Station 1.

BCT Length Frequency in Blacksmith Fork 2021 Station 1



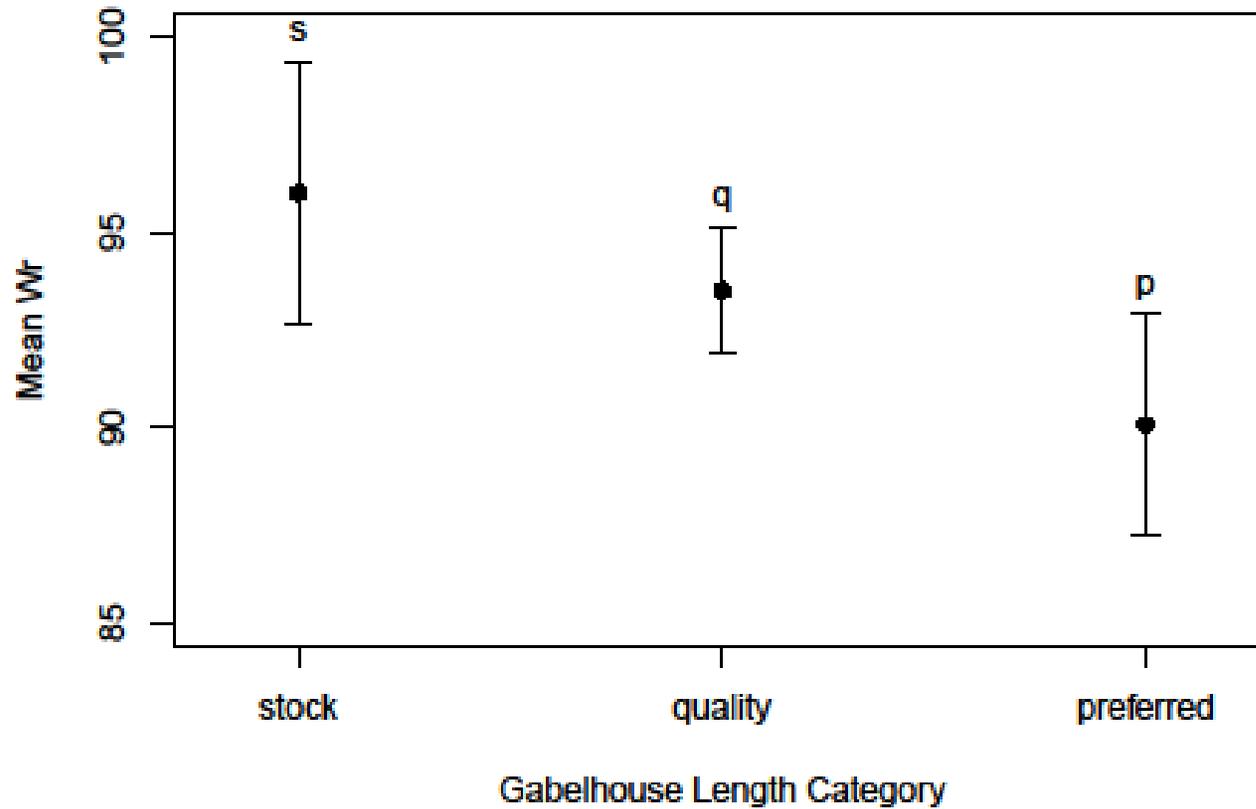
Frequency of BCT taken in electrofishing effort on September 30, 2021 at Station 1.

Brown Trout Mean Relative Weight by PSD Category



Relative weight distribution of BNT at Station 1. Brown Trout were considered stock length from 150 mm to 229 mm, quality length from 230 mm to 299 mm, and preferred length from 300 mm to 379 mm. Length category ranges from (psdVal("Brown Trout (lotic)")) in program R.

BCT Mean Wr by PSD Category at Station 1



Relative weight distribution of BCT at Station 1. Bonneville Cutthroat Trout were considered stock length from 200 mm to 349 mm, quality length from 350 mm to 449 mm, and preferred length from 450 mm to 599 mm. Length category values from (psdVal("Cutthroat Trout")) in program R.

Abundance, Condition, and Proportional Size Distribution of Target Species at Station 2

Species	Total Caught	Population Estimate	±	Fish/mile	±	kg/ha	lb/acre	Stock	Quality	Preferred
age 0 BCT	2							-	-	-
BCT	8	8		69		14	12	88	12	0
age 0 BNT	105	116	13	1007	115	6	6	-	-	-
BNT	206	207	3	1795	24	270	241	15	64	21
MWF	1	1		9		3	3	-	-	-
RBT	2							100	0	0
SC	69	432	2149	3738	18595	17	15	-	-	-

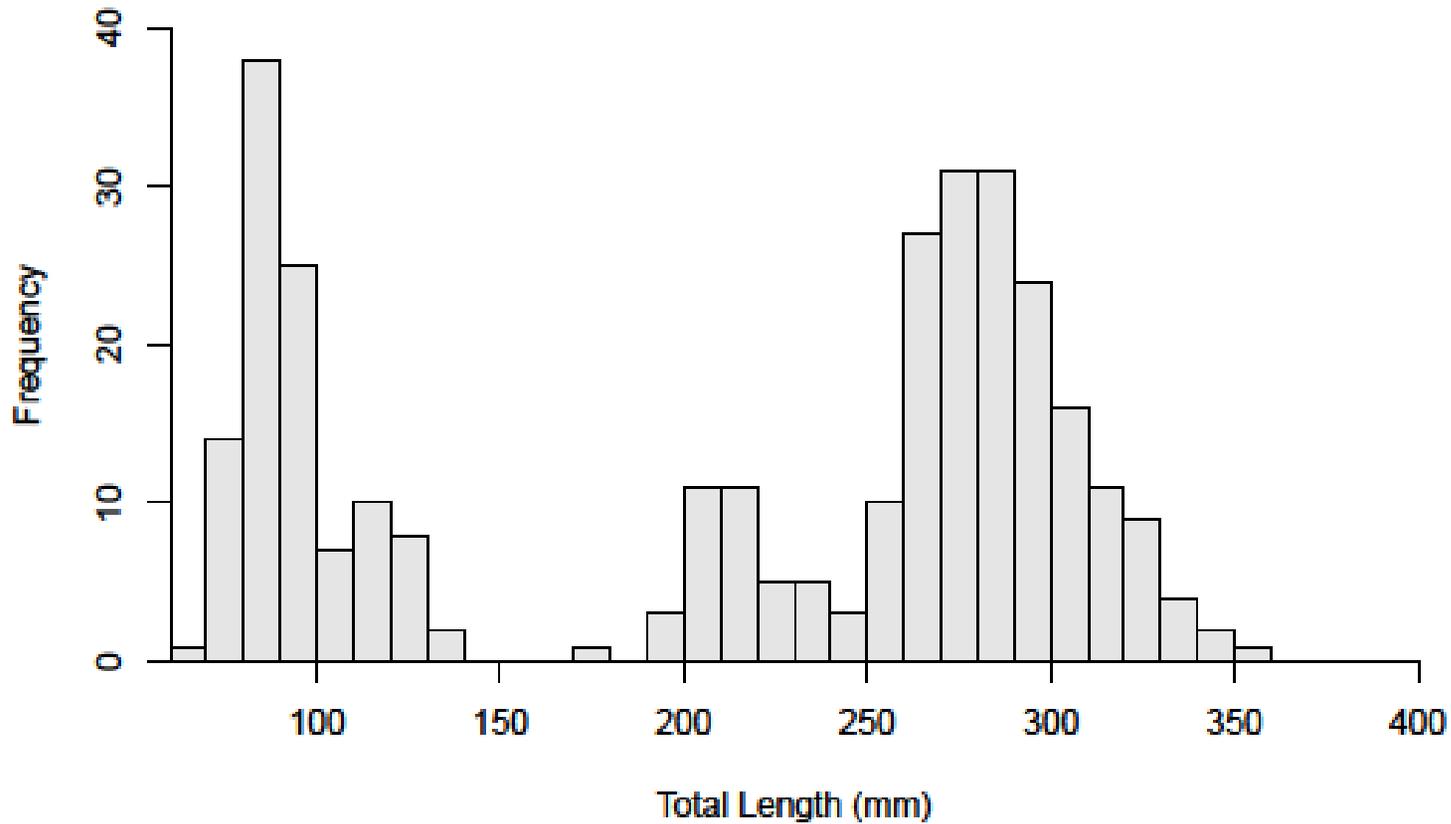
Mean lengths, weights and condition factor of Target Species at Station 2

Species	Total Caught	Length (mm)				Weight (g)				Mean Condition Factor (Fulton's k)	Relative Weight (Wr)
		Mean	Std	Min	Max	Mean	Std	Min	Max		
Age 0 BCT	2	71	6	67	75	4		4	4	-	-
BCT	8	305	48	240	376	281	132	136	519	0.9	82
age 0 BNT	105	94	16	64	136	9	6	2	25	-	-
BNT	206	274	35	177	359	215	74	32	415	1.0	93
MWF	1	360		360	360	540		540	540	1.2	-
RBT	2	279	9	273	285	194	4	191	196	0.9	-
SC	69	69	19	34	108	6	4	2	15	-	-

Comments: This sampling effort indicated a growing population of Brown Trout (BNT) while Bonneville Cutthroat Trout (BCT) were very similar in numbers caught and Mountain Whitefish (MWF) show a decline. BNT numbers in 2012 were 1,439 per mile and in 2021 they were 2,802 per mile. BCT were 73 fish per mile in 2012 and 69 fish per mile in 2021. MWF declined from 461 fish per mile to 9 fish per mile. The condition factor for BNT increased from 0.9 to 1.0 from 2012 to 2021. It declined slightly for BCT during the same time from 1.0 to 0.9, suggesting fish still remain in good condition. MWF condition did increase from 1.0 to 1.2 but that represents only 1 fish. The relative weights of BNT and BCT in 2021 were 93 and 82 respectively. We did not catch many BCT or MWF in this effort, making it difficult to draw any solid inferences about population level trends for those species.

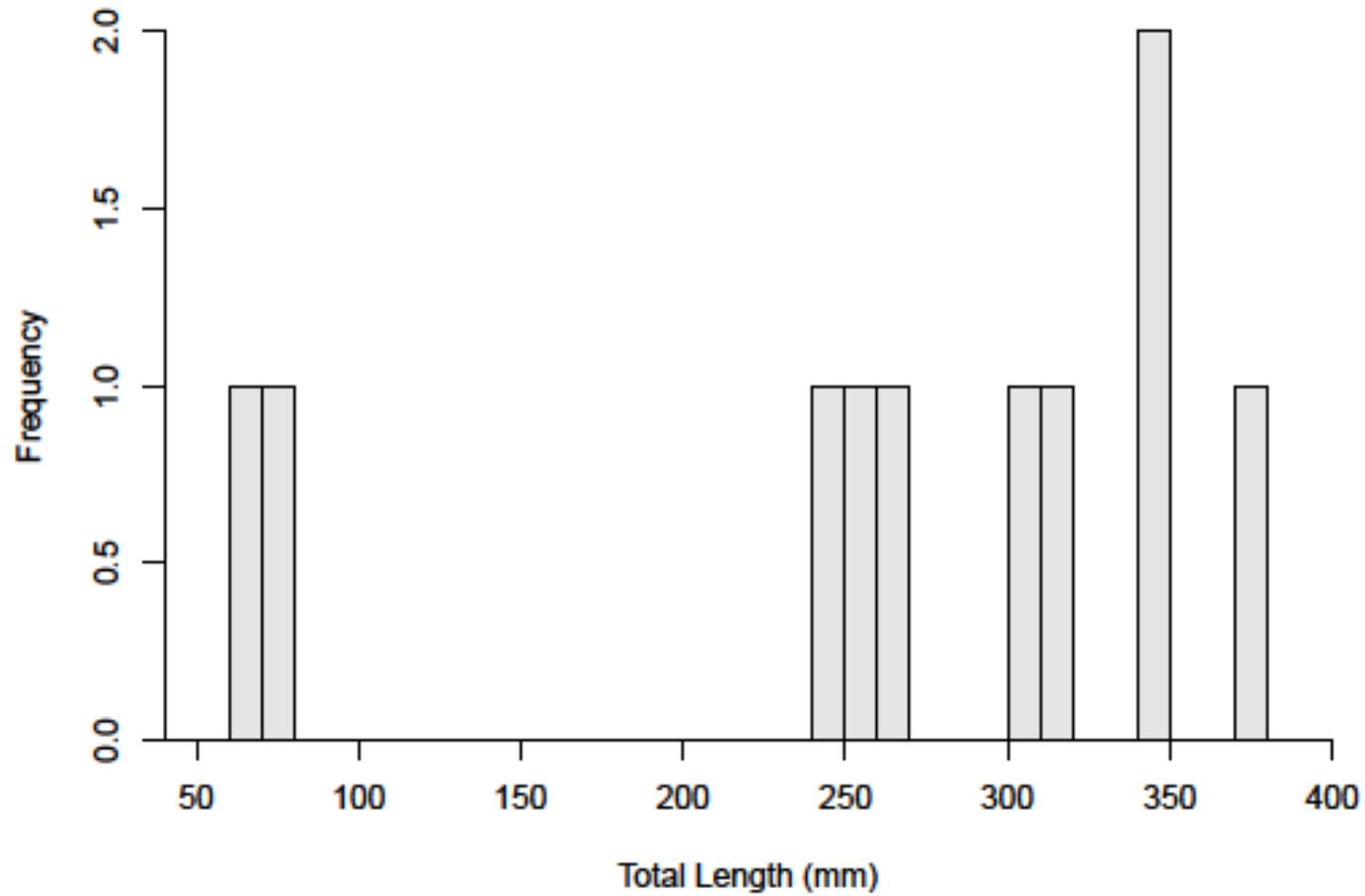
Suggested Management Changes: As mentioned above, Blacksmith Fork has a bonus harvest of 4 BNT in place. It is suggested this regulation remain in place to provide an opportunity for anglers who want to harvest additional fish and help improve this fishery.

Brown Trout Length Frequency in Blacksmith Fork 2021 Station 2



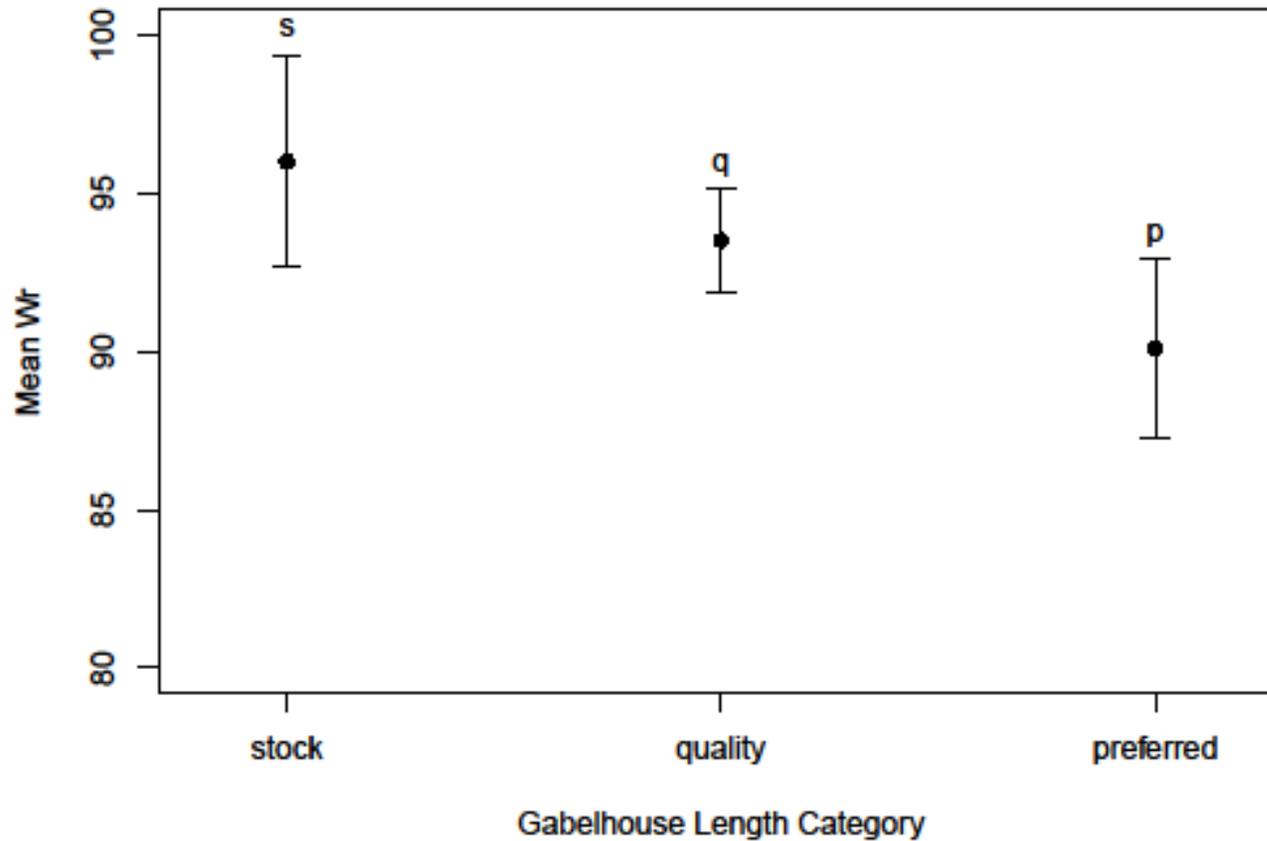
Frequency of BNT taken in electrofishing effort on September 30, 2021 at Station 2. Both X and Y axis may be different by species.

BCT Length Frequency in Blacksmith Fork 2021 Station 2

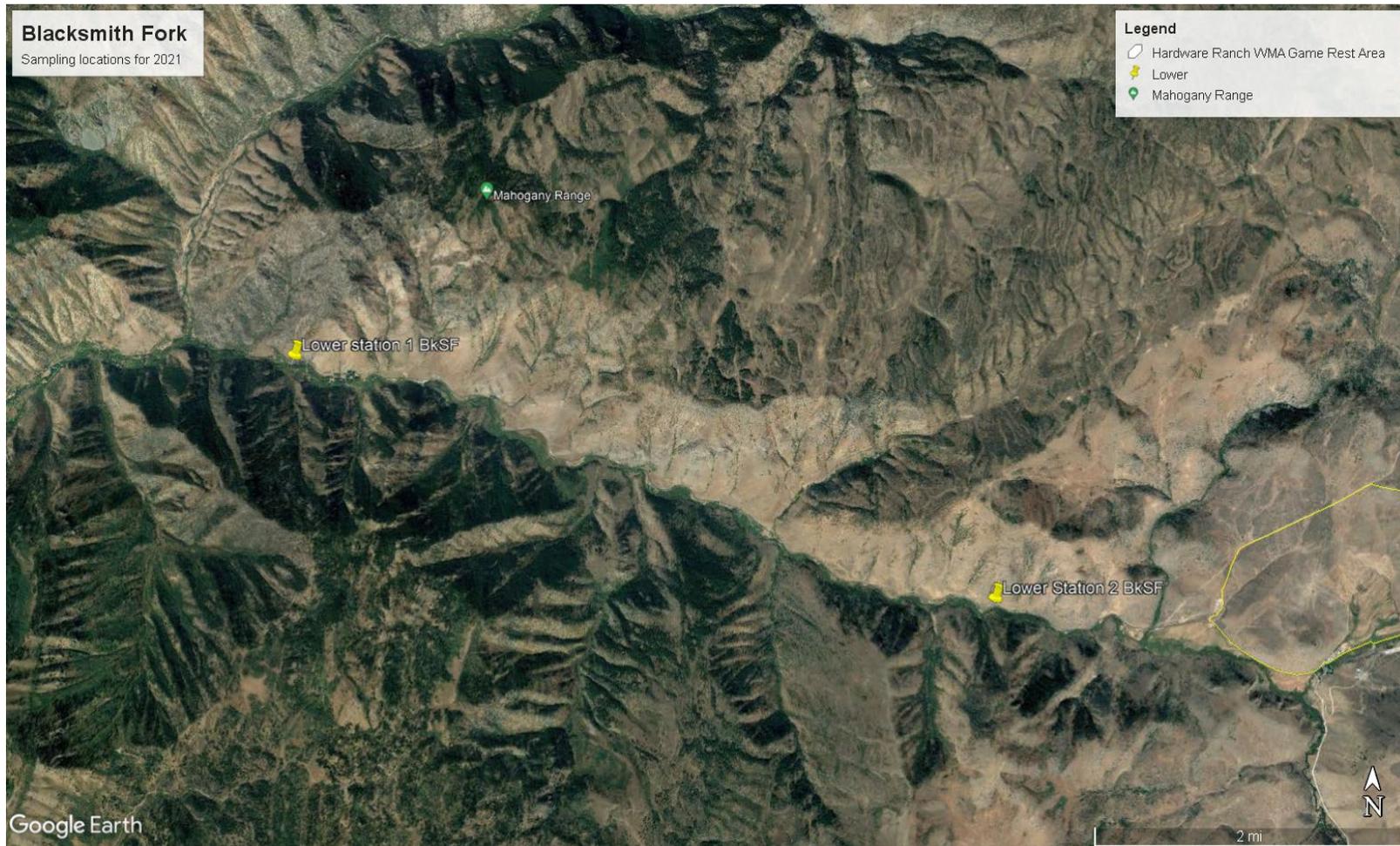


Frequency of BCT taken in electrofishing effort on September 30, 2021 at Station 2. Both X and Y axis may be different by species.

BNT Mean Wr by PSD Category at Station 2



Relative weight distribution of BNT at Station 2. Brown Trout were considered stock length from 150 mm to 229 mm, quality length from 230 mm to 299 mm, and preferred length from 300 mm to 379 mm. These values were from PSD values (psdVal("Brown Trout (lotic)")) in program R.



Map of the sampling locations for Blacksmith Fork River in September 2021.